

Entomologists' NEWSLETTER

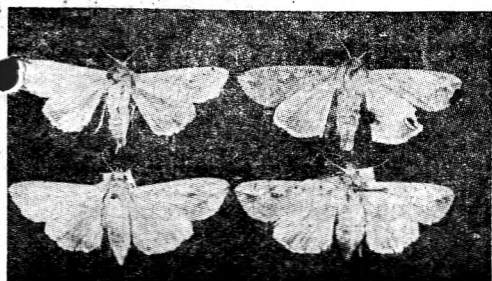
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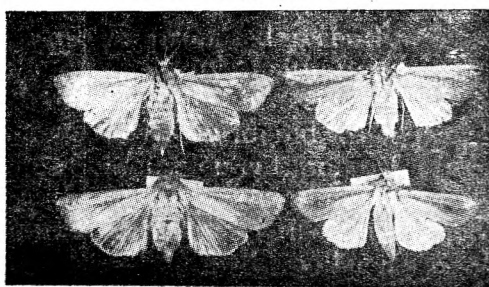
Number 3

DIFFERENT SPECIES LOOK APPARENTLY ALIKE

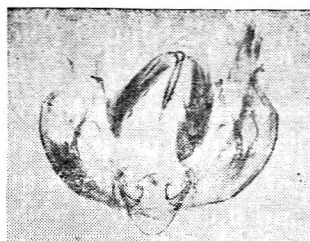
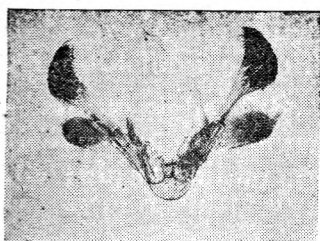
PSEUDALETIA SEPARATA



CIRPHIS LOREYI



GENITALIC STUDIES CLARIFY THE ISSUE



This suggests the utmost need for adequate Insect Identification Service
(Please see the article on pp. 17-18)

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Appreciation

I have received the first issue of the Entomologists' Newsletter for January 1971. I have read it with interest and I hope that this new venture of the Division of Entomology of the Indian Agricultural Research Institute will meet with much success. In our endeavours to increase greatly the agricultural production as a basis for the future prosperity of our country, it is very important that special attention should be paid to Entomological research so that new knowledge will be continually added, to enable us to control the many pests which cause damage and great loss to our economic plants and their products, both in the field and in storage. I send my best wishes to Dr. S. Pradhan, Head of the Division of Entomology, I. A. R. I. and the group of scientists working in this field and trust that the future will bring them further success.

B. P. Pal
Director General,
Indian Council of Agricultural Research
New Delhi

National Insect Identification Service at I.A.R.I.

The Entomology Division of the Indian Agricultural Research Institute, as is well known, has been maintaining an Insect Identification Service from its very inception in 1905 at Pusa (Bihar). The continuously growing demands for the establishment of the correct identities of various insects encountered with by different persons working in the public or private sectors all over the country together with the inadequacy of the staff available for the purpose in this Institute has been necessitating the reference of many such insects to the Commonwealth Institute of Entomology, London, for the settlement of their identities. Recently in a conference of Commonwealth Entomologists held in London from the 1st to 3rd July, 1970, a resolution to the effect that all member countries of the Commonwealth should develop and augment their own identification services and should rely on their services, has been accepted. Hence it has become imperative that the service undertaken by this Institute should be adequately strengthened for the purpose. This is presently under consideration by the Indian Council of Agricultural Research.

The National Pusa Collection (NPC) forms the basis for the identification of insects in this Institute. Out of an estimated number of fifty thousand species of Insects so far on record from this country, the collection presently contains only about fifteen thousand of them. Yet, this is the best available insect collection in this country. This collection is an invaluable national asset and its careful maintenance and augmentation is to be perfectly ensured for the ready and correct establishment of the identities of any Indian insect. Any amount of descriptive literature may be found inadequate for specific identifications and recourse to careful comparisons with correctly identified material in the collection only can solve the problem.

In the past, only superficial comparisons have been made either with literature or even with duly identified material leading one in erroneous identifications. To cite a few examples, it has recently been found that Distant's description of one of the homopteran bugs from India could be applied to as many as five different species which may be distinguished readily on the basis of characters afforded by the male genitalia only. Again, it has recently been shown that what

has been taken so long within our country as the armyworm *Cirphis unipuncta* (Haworth) is not that species at all, but another closely related species. *Pseudaletia separata* (Walker); this has again been possible only on the basis of the study of their male genitalic armatures (please see cover illustration). Like wise what has been taken as the sunnhemp moth, *Utetheisa pulchella* (Linnaeus) is now found to be comprised of really different species. A good deal of intensive taxonomic research with extensive material from all over the country is thus imminently needed.

The establishment of the correct identity is of paramount importance in undertaking any work from the fundamental or applied view points with any species. It is thus obvious that the NCP should be augmented with elaborate survey and studies and made fully representative of the Indian insect fauna. Towards this end the full co-operation of all entomologists in different parts of the country is solicited.

M.G.R. Menon

Monograph of Indian Psyllidae (Hemiptera)

A monograph of Indian Psyllidae has been prepared by Dr. R. N. Mathur, Retired Chief Research Officer (Forest Entomologist) and Head, Division of Forest Protection, F.R.I. Dehra Dun.

Catalogue of Indian Pyraustinae (Lepidoptera : Pyralidae)

References to Indian Lepidoptera, including Pyralidae, were brought together in a series of the fauna of British India by Sir George Hampson about 75 years ago. Since then many new genera and species have been added and many nomenclatural changes have been introduced. In view of this a catalogue incorporating the details of synonyms, homonyms, distribution and hosts of the sub-family Pyraustinae has been prepared by Sarvashree N.S. Bhattacharjee and S. L. Gupta.

Editors

New Records of Mites (Acarina)

Suidasia medanesis Oudemans, a tyroglyphid and *Acarophenax tribolii* Newstead and Duvall, a scutacarid mite were found in large numbers infesting cultures of *Cadra cautella* (Walker) and *Tribolium castaneum* (Herbst) respectively. While the former predares on the eggs of *Cadra*, the latter is found attached to the soft cuticle of the body of adult *Tribolium* and also beneath the second pair of wings. These mites are new records from India.

Swaraj Ghai & M.G.R. Menon

New Record of a Fruitfly Species (Diptera : Thephritidae)

Dacus (Strumeta) diaphorus (Hendel) has so far been recorded from Formosa only. While identifying the unnamed fruitfly specimens of NPC, a female specimen of this species was found collected in 1905 from Pusa (Bihar), on pumpkin.

V. C. Kapoor

Some New Host Records of Insects

To meet the requirements of Plant Breeders the world over considerable volume and variety of seed material are exchanged every year between different countries. During the course of examination of such material imported into India and intended for export, the following new host records were made :

Pest	Host	Origin of host seed
<i>Acanthoscelides</i> sp.	<i>Tephrosia toxicara</i>	Brazil
<i>Bruchidius</i> sp.	<i>Sesbania aculeata</i> , <i>Acacia concinna</i>	India
<i>B. multivariegatus</i> (Pic)	<i>Glycine javanica</i>	Kenya
<i>Caryedon serratus</i> (Olivier)	<i>Acacia leucophloea</i>	India
<i>C. languidus</i> (Gyllenhal)	<i>Prosopis juliflora</i>	India
<i>Spermophagus tessellatus</i> (Motschulsky)	<i>Hibiscus cannabinus</i>	India
<i>Araecerus fasciculatus</i> DeGeer	<i>Syzygium aromaticum</i>)	India

Pest	Host	Origin of host seed
<i>Gonocephalum</i> sp.	<i>Elusine</i>	India
<i>G. inaequale</i> Gridelli	<i>Hibiscus cannabinus</i>	India
<i>Ptinus tectus</i> Boield	<i>Dactylis glomerata</i>	Italy
<i>Bruchophagus gibba</i> Boheman	<i>Colutea istria</i>	Israel
<i>Systasis cenchrivora</i> Farooqi (MS.)	<i>Cenchrus ciliaris</i>	India

S.R. Wadhi, B.R. Verma and K.M. Srivastava

Host Record of *Callitula bipartitus* Farooqi (MS.)

Callitula bipartitus was recorded parasitising the grubs of sorghum shoot fly, *Atherigona varia soccata* Rondani at Udaipur during August to September. The extent of parasitism was very low.

G.G. Kundu, Prem Kishore & M. G. Jotwani

Blister Beetles as Pests of Sorghum

The blister beetles, *Mylabris pustulata* Thunberg and *Lytta tenuicollis* (Pallas) already reported from the South as occasionally feeding on the sorghum blossoms have been observed as serious pests of developing grains of sorghum at Vallabnagar (Udaipur) continuously for four years since 1967. On an average eight adult beetles were found feeding on each ear-head. Surprisingly the surveys carried out in other parts of the northern and western regions of the country did not show the incidence of these beetles on sorghum. Spraying the ear-heads either with 0.15% carbaryl W.P. or with 0.05% endosulfan E.C. gave satisfactory protection to the ear-heads.

G. G. Kundu, Prem Kishore & T. R. Sukhani

Nomenclatural Changes

Ghauri (1967) has transferred the cotton jassid, *Empoasca devastans* Distant, a serious pest of cotton, to his new genus *Amrasca*. Hence the correct name of the jassid is now *Amrasca devastans* (Distant).

Usha Ramakrishnan

Trichogramma evanescens minutum Riley, the well known egg parasite of sugarcane borers occurring in India is now established as *T. australicum* Girault by S. Nagarkatti and H. Nagaraja of Commonwealth Institute of Biological Control, Bangalore, Mysore.

Atma Ram

Types Incorporated in the National Pusa Collection

<i>Anechura pirpanjalae</i> Kapoor	Dermaptera	Forficulidae
<i>A. nanyari</i> Kapoor	"	"
<i>A. virgae</i> Kapoor	"	"
<i>Forficula baijali</i> Kapoor	"	"
<i>F. genitalia</i> Kapoor	"	"
<i>F. indie</i> Kapoor	"	"
<i>F. cheraphinji</i> Kapoor	"	"
<i>Kosmetor josephi</i> Kapoor	"	"
<i>Calcolampra simlansis</i> Baijal & Kapoor	Dictyoptera	Blattidae

Usha Ramakrishnan

Hiding Habitat of *Aulacophora*

While conducting surveys for *Aulacophora* adults during their off season, they were discovered hiding amidst grass roots in the Tihar village of Delhi. Here the fields had cucurbit crops during last summer and rainy seasons and now they have crops like potato, wheat, radish, cabbage and garlic. Some of the bunds of these fields have bushy castor plants covered with climbing beans on account of which there is enough shade. When the debris of decayed matter and fallen leaves covering the grass under castor plants was removed, and the grass uprooted, large numbers of these beetles were located resting in inactive state among the roots. If such pockets of off-season *Aulacophora* are located they may be picked up and easily destroyed by dipping them in kerosene oil, instead of resorting to control this pest during the coming cucurbit season when they become active and get dispersed.

Roshan Lal

Persistence of Malathion in Stored Grains

It was reported in 1965 from this Division (Division of Entomology) that wheat at 13% moisture content when treated with malathion dust to a level of 24 ppm and further stored at 28° C., the biological effectiveness of malathion is lost within 3 to 4 months as tested against *Sitophilus oryzae* Linnaeus and *Tribolium castaneum* (Herbst). It has now been found that when sorghum at less than 10% moisture content is treated with malathion at 30 ppm level and stored under room conditions, the biological effectiveness lasts as long as 10 months as tested against *Rhizopertha dominica* Fabricius, *T. castaneum*, *S. oryzae* and *Corcyra cephalonica* Stainton. Thus it appears that the persistence of malathion varies from grain to grain.

P.B. Mookherjee, B.N. Bose & S. Singh

Relative toxicity of insecticides against larvae of *Agrotis ypsilon* Rottenburg

Eleven insecticides were tested as dusts for their toxicity to the larvae of the potato cutworm, *A. ypsilon*. The order of toxicity was found to be aldrin, heptachlor, endrin, dieldrin, lindane, parathion, malathion, toxaphene, carbaryl, chlordane, and B.H.C. in the descending order. LC₅₀ of aldrin and B.H.C. worked out to be 1.99 and 6.44 respectively. This information, along with the availability and price can be used for selecting various insecticides for large scale field trials.

Sukumar Ray

Vitamin-synthesis and Nitrogen-fixation by the Symbiotic Bacteria of *Sitophilus oryzae* Linnaeus

Sitophilus oryzae is among the insects which contain intracellular symbiotic bacteria in the midgut caecae of adult. These microorganisms are transmitted from generation to generation through ovarial infection.

For the first time the bacterium was isolated and cultured from egg, ovary and intestinal caecae. It was identified as a species closely resembling *Bacillus circulans*. With the help of technique of raising insects on artificial pellets it is established that *Sitophilus* can grow in the absence of certain vitamins essential for insects in general.